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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,420

01/05/2006

Matthias Brunig

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ALEXANDRIA, VA 22314

EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

04/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,420	<b>Applicant(s)</b> BRUNIG, MATTHIAS	
	<b>Examiner</b> Christopher Verdier	<b>Art Unit</b> 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1-5-06, 12-3-07</u> .   | 6) <input type="checkbox"/> Other: _____                          |

Receipt and entry of Applicant's Preliminary Amendment dated January 5, 2006 is acknowledged.

### ***Oath/Declaration***

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:  
It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56. Rather, it includes the phrase "material information as defined in ... Section 1.56(a)."

### ***Specification***

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

The abstract of the disclosure is objected to because it contains the phrase "The invention relates to" (line 1) which is implied and should be deleted, and because it contains the legal term "said" (line 5). Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because it is replete with grammatical errors too numerous to mention in all instances. The following are several examples of defects. The specification should be carefully proofread for additional defects. Appropriate correction is required.

On page 1, line 4, “hub driven rotary” should be changed to -- rotary hub driven --.

On page 1, line 16, “steams” should be changed to -- steam --.

On page 2, line 1, “. In” should be changed to -- , and in --.

On page 2, line 6, -- a -- should be inserted after “as”.

On page 2, line 6, -- a -- should be inserted after “in”.

On page 4, line 18, “4” (first occurrence) should be changed to -- 7 --.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 2, which recites that the blades are arranged almost perpendicularly to the vector of the direction of rotation in the vicinity of the axis of rotation has no antecedent basis in the specification for the underlined limitation. It is suggested that the specification be amended to state this feature, in order to overcome the objection to the specification as failing to provide proper antecedent basis for the claimed subject matter. Otherwise, the above subject matter would have to be canceled from the claims.

### ***Claim Objections***

Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form. Claim 9 depends from claim 6, and contains all limitations of claim 6.

Claims 1-9 are objected to because of the following informalities: Appropriate correction is required.

In claim 1, line 3, -- a -- should be inserted after “between”.

In claim 1, line 4, -- a -- should be inserted after “and”.

In claim 1, line 4, -- the -- should be inserted after “in” (first occurrence).

In claim 1, line 8, -- the -- should be inserted after “in”.

In claim 2, line 1, “conveying” should be deleted.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, line 2, “the flow channel” is unclear as to whether this refers to the impeller disk, or a flow channel inside a casing. If this refers to a flow channel inside a casing, then the term “the flow channel” lacks antecedent basis. In claim 1, line 2, “the inside” is unclear as to which element this refers to. In claim 1, lines 6 and 7, “of which” is unclear as to which element this refers to. In claim 3, line 3, “the dedendum line” lacks antecedent basis. In claim 4, lines 2-3, claim 5, line 2, and claim 6, line 2, “the dedendum line” lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4, as far as they are definite and understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Schmidt 2,709,035. Disclosed is a propeller blower 55 for substantially axial outflow of sucked in air with an impeller disk 82 rotary driven around an axis of rotation and limiting a flow channel on the inside of the impeller disk, comprising blades 90 which are, viewed in the blade area between a blade entrance edge 98 and a blade discharge edge 100, bent in the flow direction, characterized in that each blade is formed in the shape of an oyster shell having a longitudinal extension, the end portion of which is connected with the impeller disk in form of a penetration, and the other, free end portion of which extends radially outwards and with increasing radial distance with an axial component in flow direction, and that the blades are bent towards the circumferential direction R of the rotary drive of the impeller disk. An indentation 84 is formed on the impeller disk in the area before an unnumbered dedendum line near 92.

Claim 1, as far as it is definite and understood, is rejected under 35 U.S.C. 102(b) as being anticipated by German Patent 3,033,685 (figures 1-5). Disclosed is a propeller blower 6 for substantially axial outflow of sucked in air with an impeller disk 10 rotary driven around an

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axis of rotation and limiting a flow channel on the inside of the impeller disk, comprising blades 61 which are, viewed in the blade area between a blade entrance edge (the upper portion in figure 1) and a blade discharge edge (the lower portion in figure 2), bent in the flow direction, characterized in that each blade is formed in the shape of an oyster shell having a longitudinal extension, the end portion of which is connected with the impeller disk in form of a penetration, and the other, free end portion of which extends radially outwards and with increasing radial distance with an axial component in flow direction, and that the blades are bent towards the circumferential direction R of the rotary drive of the impeller disk.

Claim 1, as far as it is definite and understood, is rejected under 35 U.S.C. 102(b) as being anticipated by United Kingdom Patent 849,744. Disclosed is a propeller blower for substantially axial outflow of sucked in air with an impeller disk 13 rotary driven around an axis of rotation and limiting a flow channel on the inside of the impeller disk, comprising blades 14 which are, viewed in the blade area between a blade entrance edge and a blade discharge edge, bent in the axial flow direction, characterized in that each blade is formed in the shape of an oyster shell having a longitudinal extension, the end portion of which is connected with the impeller disk in form of a penetration, and the other, free end portion of which extends radially outwards and with increasing radial distance with an axial component in flow direction, and that the blades are bent towards the circumferential direction of the rotary drive of the impeller disk.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 6, and 9, as far as they are definite and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt 2,709,035 in view of Kullen 4,678,410. Schmidt discloses a propeller blower substantially as claimed as set forth above, including the entrance edges of the blades being bent from the inside to the outer edge concavely to the direction of rotation, with the radially inner extensions of the blades having a radial distance to the axis of rotation, but does not disclose that the blades are arranged almost perpendicularly to the vector of the direction of rotation in the vicinity of the axis of rotation (claim 2).

Kullen shows an axial flow impeller having blades 1.1, 1.2, that are arranged almost perpendicularly to a vector of a direction of rotation in the vicinity of an axis of rotation, for the purpose of reducing noise.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the propeller blower of Schmidt such that the blades are arranged almost perpendicularly to the vector of the direction of rotation in the vicinity of the axis of rotation, as taught by Kullen, for the purpose of reducing noise.



Claims 5 and 8, as far as they are definite and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt 2,709,035 and Kullen 4,678,410 as applied to claim 2 above, and further in view of United Kingdom Patent 849,744. The modified propeller blower of Schmidt shows all of the claimed subject matter, including the dedendum line curved in the direction of rotation, but does not show the dedendum line pointing past the axis of rotation (claim 5).

United Kingdom Patent 849,744 shows a propeller blower for substantially axial outflow of sucked in air with an impeller disk 13, comprising blades 14 which are, viewed in the blade area between a blade entrance edge and a blade discharge edge, bent in the axial flow direction, characterized in that each blade is formed in the shape of an oyster shell having a longitudinal extension, the end portion of which is connected with the impeller disk in form of a penetration, and the other, free end portion of which extends radially outwards and with increasing radial distance with an axial component in flow direction, and that the blades are bent towards the circumferential direction of the rotary drive of the impeller disk. The radially inner extensions of the blades have a radial distance to the axis of rotation, and an unnumbered dedendum line points past the axis of rotation. The arrangement is provided for the purposes of reducing noise and providing a suitable volume/pressure ratio.

It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified propeller blower of Schmidt such that the dedendum

line points past the axis of rotation, as taught by United Kingdom Patent 849,744, for the purposes of reducing noise and providing a suitable volume/pressure ratio.

Claim 2, as far as it is definite and understood, is also rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent 3,033,685 in view of Kullen 4,678,410. German Patent 3,033,685 discloses a propeller blower substantially as claimed as set forth above, including the entrance edges of the blades being bent from the inside to the outer edge concavely to the direction of rotation R, with the radially inner extensions of the blades having a radial distance to the axis of rotation, but does not disclose that the blades are arranged almost perpendicularly to the vector of the direction of rotation in the vicinity of the axis of rotation.

Kullen shows an axial flow impeller having blades 1.1, 1.2, that are arranged almost perpendicularly to a vector of a direction of rotation in the vicinity of an axis of rotation, for the purpose of reducing noise.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the propeller blower of German Patent 3,033,685 such that the blades are arranged almost perpendicularly to the vector of the direction of rotation in the vicinity of the axis of rotation, as taught by Kullen, for the purpose of reducing noise.

Claim 5, as far as it is definite and understood, is also rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent 3,033,685 and Kullen 4,678,410 as applied to claim 2

above, and further in view of United Kingdom Patent 849,744. The modified propeller blower of German Patent 3,033,685 shows all of the claimed subject matter including the dedendum line curved in the direction of rotation, but does not show the dedendum line pointing past the axis of rotation.

United Kingdom Patent 849,744 shows a propeller blower for substantially axial outflow of sucked in air with an impeller disk 13, comprising blades 14 which are, viewed in the blade area between a blade entrance edge and a blade discharge edge, bent in the axial flow direction, characterized in that each blade is formed in the shape of an oyster shell having a longitudinal extension, the end portion of which is connected with the impeller disk in form of a penetration, and the other, free end portion of which extends radially outwards and with increasing radial distance with an axial component in flow direction, and that the blades are bent towards the circumferential direction of the rotary drive of the impeller disk. The radially inner extensions of the blades have a radial distance to the axis of rotation, and an unnumbered dedendum line points past the axis of rotation. The arrangement is provided for the purposes of reducing noise and providing a suitable volume/pressure ratio.

It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified propeller blower of German Patent 3,033,685 such that the dedendum line points past the axis of rotation, as taught by United Kingdom Patent 849,744, for the purposes of reducing noise and providing a suitable volume/pressure ratio.

Claims 3 and 7, as far as they are definite and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt 2,709,035 in view of United Kingdom Patent 849,744. Schmidt discloses a propeller blower substantially as claimed as set forth above, including the entrance edges of the blades being bent from the inside to the outer edge concavely to the direction of rotation, with the radially inner extensions of the blades having a radial distance to the axis of rotation, with the dedendum line curved in the direction of rotation, but does not disclose that the dedendum line points past the axis of rotation (claim 3).

United Kingdom Patent 849,744 shows a propeller blower for substantially axial outflow of sucked in air with an impeller disk 13, comprising blades 14 which are, viewed in the blade area between a blade entrance edge and a blade discharge edge, bent in the axial flow direction, characterized in that each blade is formed in the shape of an oyster shell having a longitudinal extension, the end portion of which is connected with the impeller disk in form of a penetration, and the other, free end portion of which extends radially outwards and with increasing radial distance with an axial component in flow direction, and that the blades are bent towards the circumferential direction of the rotary drive of the impeller disk. The radially inner extensions of the blades have a radial distance to the axis of rotation, and an unnumbered dedendum line points past the axis of rotation. The arrangement is provided for the purposes of reducing noise and providing a suitable volume/pressure ratio.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the propeller blower of Schmidt such that the dedendum line

points past the axis of rotation, as taught by United Kingdom Patent 849,744, for the purposes of reducing noise and providing a suitable volume/pressure ratio.

Claim 3, as far as it is definite and understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent 3,033,685 in view of United Kingdom Patent 849,744. German Patent 3,033,685 discloses a propeller blower substantially as claimed as set forth above, including the entrance edges of the blades being bent from the inside to the outer edge concavely to the direction of rotation, with the radially inner extensions of the blades having a radial distance to the axis of rotation, with the dedendum line curved in the direction of rotation, but does not disclose that the dedendum line points past the axis of rotation.

United Kingdom Patent 849,744 shows a propeller blower for substantially axial outflow of sucked in air with an impeller disk 13, comprising blades 14 which are, viewed in the blade area between a blade entrance edge and a blade discharge edge, bent in the axial flow direction, characterized in that each blade is formed in the shape of an oyster shell having a longitudinal extension, the end portion of which is connected with the impeller disk in form of a penetration, and the other, free end portion of which extends radially outwards and with increasing radial distance with an axial component in flow direction, and that the blades are bent towards the circumferential direction of the rotary drive of the impeller disk. The radially inner extensions of the blades have a radial distance to the axis of rotation, and an unnumbered dedendum line points past the axis of rotation. The arrangement is provided for the purposes of reducing noise and providing a suitable volume/pressure ratio.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the propeller blower of German Patent 3,033,685 such that the dedendum line points past the axis of rotation, as taught by United Kingdom Patent 849,744, for the purposes of reducing noise and providing a suitable volume/pressure ratio.

***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stevens is cited to show a propeller with blades which, when viewed in the blade area between a blade entrance edge and a blade discharge edge, are bent in the flow direction, each blade formed in the shape of an oyster shell, with indentations before a dedendum line. This reference could also have been applied as it anticipates at least claim 1 under 35 U.S.C. 102, but is not applied at this time in order to avoid multiple rejections.

Alizadeh is cited to show a propeller with blades which, when viewed in the blade area between a blade entrance edge and a blade discharge edge, are bent in the flow direction, each blade formed in the shape of an oyster shell. This reference could also have been applied as it anticipates at least claim 1 under 35 U.S.C. 102, but is not applied at this time in order to avoid multiple rejections.

O'Connor is cited to show an axial flow impeller with a dedendum line that extends past the hub.

Seinfeld is cited to show an impeller disk with indentations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Verdier/  
Primary Examiner, Art Unit 3745

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